
From: Coltrain, Katrina
Sent: Friday, July 29, 2016 2:59 PM
To: Perez, Myra; Warren, Christy; Flores, Raymond
Cc: Luis Vega (lvega@eaest.com); Patrick Appel (pappel@eaest.com)
Subject: Wilcox Oil Company - Lab Request Forms Updated
Attachments: Lab sample tables 7-29-16.pdf; Primary COPCs for Wilcox 7-27-16.xlsx; WILCOX RI Sept 12-2016 Sample Request Form 7-29-16.doc; WILCOX RI Sept 19-2016 Sample Request Form 7-29-16.doc

All, please find attached the Lab Request Forms for Wilcox Oil. As discussed, we will be in the field the weeks of September 12 and September 19. In addition, we have confirmed that additional funding for the project will not be forthcoming in time for us to complete all actions we planned; therefore, the number of samples being requested for soil has been significantly reduced.

Also, you will notice that the plan is to use the pre-weighted vials/stir bar for sampling the VOCs in soil (rather than the core samplers as mention on the conference call). Because of the nature of the sampling, some of them may be medium soil but we are not certain that is the case. Can we indicate on the Chain-of-custody the samples we think will be medium and if the lab finds that the samples may be low, rerun the sample without dilution as a low concentration sample?

Thank you for your time and patience as we worked through these issues. I hope that these forms provide you with a better understanding of what we need for the RI. Please call with any questions.

thanks

Katrina Higgins-Coltrain
Remedial Project Manager
US EPA Region 6
LA/OK/NM Section (6SF-RL)
1445 Ross Avenue
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214-665-8143

TABLE 6. PROPOSED FIELD PROGRAM FOR SOIL INVESTIGATION

Sample Location	Sample Medium	Rationale	Number of Sample Locations	Sample Identification	Sampling Tool	Sampling Depth (ft bgs)	Analysis									
							Field Screening by PID	VOCs (includes EDB)	PAHs (SIM)	SVOCs	TAL Metals (includes Mercury)	Cyanide	Hexavalent Chromium	Pesticides	PCBs	Dioxins/ Furans
Lorraine Process Area																
Lorraine Process Area (LPA)	Surface soil	To assess potential source areas and delineate nature and extent	26	LPA-SB-01-0.5 through LPA-SB-26-0.5	Split spoon Continuous sampler PVC/acetate sleeve	0.0 - 0.5	Yes	26	26	26	26	26	0	0	0	0
	Subsurface soil		26	LPA-SB-01-2.0 through LPA-SB-26-2.0		0.5 - 2.0	Yes	26	26	26	26	26	0	0	0	0
			26	LPA-SB-01-6.0 through WPA-SB-26-6.0		2.0 -6.0	Yes	26	26	26	26	26	0	0	0	0
			26	LPA-SB-01-10.0 through LPA-SB-26-10.0		6.0 - 10.0	Yes	26	26	26	26	26	0	0	0	0
			26	LPA-SB-01-?? through LPA-SB-26-??		2 ft interval above refusal	Yes	26	26	26	26	26	0	0	0	0
Lorraine Process Area (LPA) Cooling Pond	Surface soil	To determine if cooling pond is a source area	4	LPA-SB-27-0.5 through LPA-SB-30-0.5	Split spoon Continuous sampler PVC/acetate sleeve	0.0 - 0.5	Yes	4	4	4	4	4	4	0	0	0
	Subsurface soil		4	LPA-SB-27-2.0 through LPA-SB-30-2.0		0.5 - 2.0	Yes	4	4	4	4	4	0	0	0	0
			4	LPA-SB-27-6.0 through WPA-SB-30-6.0		2.0 -6.0	Yes	4	4	4	4	4	0	0	0	0
			4	LPA-SB-27-10.0 through LPA-SB-30-10.0		6.0 - 10.0	Yes	4	4	4	4	4	0	0	0	0
			4	LPA-SB-27-?? through LPA-SB-30-??		2 ft interval above refusal	Yes	4	4	4	4	4	0	0	0	0
Wilcox Process Area																
Wilcox Process Area (WPA)	Surface soil	To assess potential source areas and delineate nature and extent	65	WPA-SB-01-0.5 through WPA-SB-65-0.5	Split spoon Continuous sampler PVC/acetate sleeve	0.0 - 0.5	Yes	65	65	65	65	65	Total 10 samples: 7 Randomly Selected Borings + WPA-SB-01-0.5 WPA-SB-01-0.5 WPA-SB-19-0.5	10	10	10
	Subsurface soil		65	WPA-SB-01-2.0 through WPA-SB-65-2.0		0.5 - 2.0	Yes	65	65	65	65	65	0	0	0	0
			65	WPA-SB-01 -6.0 through WPA-SB-65-6.0		2.0 -6.0	Yes	65	65	65	65	65	0	0	0	0
			65	WPA-SB-01 -10.0 through WPA-SB-65-10.0		6.0 - 10.0	Yes	65	65	65	65	65	0	0	0	0
			65	WPA-SB-01-?? through WPA-SB-65-??		2 ft interval above refusal	Yes	65	65	65	65	65	0	0	0	0
East Tank Farm Area																
East Tank Farm (ETF)	Surface soil	To assess potential source areas and delineate nature and extent	11	ETF-SB-01-0.5 through ETF-SB-11-0.5	Split spoon Continuous sampler PVC/acetate sleeve	0.0 - 0.5	Yes	11	11	11	11	11	0	0	0	0
	Subsurface soil		11	ETF-SB-01-2.0 through ETF-SB-11-2.0		0.5 - 2.0	Yes	11	11	11	11	11	0	0	0	0
			11	ETF-SB-01-6.0 through ETF-SB-11-6.0		2.0 -6.0	Yes	11	11	11	11	11	0	0	0	0
			11	ETF-SB-01-10.0 through ETF-SB-11-10.0		6.0 - 10.0	Yes	11	11	11	11	11	0	0	0	0
			11	ETF-SB-01-?? through ETF-SB-11-??		2 ft interval above refusal	Yes	11	11	11	11	11	0	0	0	0
East Tank Farm (ETF) Tanks 1 and 4	Surface soil	To determine if this is a source area	10	ETF-SB-12-0.5 through ETF-SB-21-0.5	Split spoon Continuous sampler PVC/acetate sleeve	0.0 - 0.5	Yes	10	10	10	10	10	0	0	0	0
	Surface soil		10	ETF-SB-12-2.0 through ETF-SB-21-2.0		0.5 - 2.0	Yes	10	10	10	10	10	0	0	0	0
Total Soil Samples								550	550	550	550	550	14	10	10	10
Soil Investigation QC																
Field Duplicates	Soil		1 per 10 samples					55	55	55	55	55	2	1	1	1
MS/MSDs	Soil		1 per 20 samples (extra volume only; not included in total sample count)					28	28	28	28	28	1	1	1	1
Total Soil Samples Associated with Soil Investigation								633	633	633	633	633	17	12	12	12
Water QC Samples																
Trip blanks	Water		1 per cooler containing equipment rinsate for equipment used in soil investigation					15	0	0	0	0	0	0	0	0
Equipment blanks	Water		1 per day per set of for nondedicated equipment per team					30	30	30	30	30	1	1	1	1
Total Water QC Samples Associated with Soil Investigation								45	30	30	30	30	1	1	1	1

TABLE 6. PROPOSED FIELD PROGRAM FOR SOIL INVESTIGATION

Sample Location	Sample Medium	Rationale	Number of Sample Locations	Sample Identification	Sampling Tool	Sampling Depth (ft bgs)	Analysis									
							Field Screening by PID	VOCs (includes EDB)	PAHs (SIM)	SVOCs	TAL Metals (includes Mercury)	Cyanide	Hexavalent Chromium	Pesticides	PCBs	Dioxins/ Furans
Background																
Background grid	Surface soil	Background	1	BKG-0.5	ICS Methodology Hand auger Slide hammer Scoop	0.0 - 0.5	Yes	0	1	0	1	0	0	0	0	1
Total Background Soil Samples								0	1	0	1	0	0	0	0	1
Background Soil QC																
Field Replicates	Soil		1 Duplicate (BKG-0.5-D) and 1 Triplicate (BKG-0.5-T)					0	2	0	2	0	0	0	0	2
MS/MSDs	Soil		1 per 20 samples (extra volume only; not included in total sample count)					0	1	0	1	0	0	0	0	1
Total Soil Samples Associated with Background								0	3	0	3	0	0	0	0	3
Water QC Samples																
Trip blanks	Water		1 per cooler containing equipment rinsate for equipment used in soil investigation					0	0	0	0	0	0	0	0	0
Equipment blanks	Water		1 per day per set of for nondedicated equipment per team					0	1	0	1	0	0	0	0	1
Total Water QC Samples Associated with Background Soil								0	1	0	1	0	0	0	0	1
NOTES: Sample depth will vary depending upon location of sample and depth of refusal; as a result, the number of samples collected may be less than shown. bgs = Below ground surface EDB = Ethylene dibromide ft = foot (feet) ICS = Incremental Composite Sampling MS = Matrix spike MSD = Matrix spike duplicate NORM = Naturally-occurring radioactive materials PAH = Polycyclic aromatic hydrocarbon PCB = Polychlorinated biphenyl PID = Photoionization detector PVC = polyvinyl chloride QC = Quality control SIM = Selective ion monitoring SVOC = Semivolatile organic compound TAL = Target Analyte List TPH = Total petroleum hydrocarbons VOC = Volatile organic compound																

TABLE 8. PROPOSED FIELD PROGRAM FOR PRIVATE SUPPLY WELL AND PIEZOMETER SAMPLING

Sample Location	Sample Identification	Sampling Method	Analyses										
			Field Parameters	LNAPL Characterization	VOCs (includes EDB)	PAHs (SIM)	SVOCs	TAL Metals (includes Mercury)	Cyanide	Hexavalent Chromium	Pesticides	PCBs	Dioxins/ Furans
East Tank Farm Residential Wells	GW-01	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-02	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-03	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-04	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
North of East Tank Farm Residential Wells	GW-05	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-06	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-07	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
South of East Tank Farm Residential Wells	GW-08	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-09	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
Lorraine Process Area Church Well	GW-10	Tap or Grab	1	1	1	1	1	1	1	1	0	0	0
North Tank Farm Residential Well	GW-11	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
North of North Tank Farm Residential Well	GW-12	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
Wilcox Residential Well	GW-13	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
East Tank Farm Private Wells Not In Use	GW-14	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
	GW-15	Tap or Grab	1	0	1	1	1	1	1	1	0	0	0
Total Investigation Tap Samples			15	1	15	15	15	15	15	15	0	0	0
Field duplicate	1 per 10 samples		0	0	2	2	2	2	2	2	0	0	0
MS/MSDs	1 per 20 samples (extra volume only; not included in total sample count)		0	0	1	1	1	1	1	1	0	0	0
Total Private Supply Well Samples			15	1	17	17	17	17	17	17	0	0	0
Water QC Samples													
Trip blanks	1 per cooler containing aqueous samples for VOC analysis		0	0	1	0	0	0	0	0	0	0	0
Equipment blanks	1 per day per set of for nondedicated equipment per team		0	0	0	0	0	0	0	0	0	0	0
Total Water QC Samples Associated with Private Supply Well Sampling			0	0	1	0	0	0	0	0	0	0	0
Piezometers													
Piezometers	PW-01 through PW-10	Low Flow	10	0	10	10	10	10	10	1	0	0	0
Total Investigation Tap Samples			10	0	10	10	10	10	10	1	0	0	0
Field duplicate	1 per 10 samples		0	0	1	1	1	1	1	1	0	0	0
MS/MSDs	1 per 20 samples (extra volume only; not included in total sample count)		0	0	1	1	1	1	1	1	0	0	0
Total Piezometer Samples			10	0	11	11	11	11	11	2	0	0	0
Water QC Samples													
Trip blanks	1 per cooler containing aqueous samples for VOC analysis		0	0	1	0	0	0	0	0	0	0	0
Equipment blanks	1 per day per set of nondedicated equipment per team		0	0	1	1	1	1	1	1	0	0	0
Total Water QC Samples Associated with Piezometer Sampling			0	0	2	1	1	1	1	1	0	0	0
NOTES: Field parameters: pH, temperature, conductivity, dissolved oxygen, oxidation-reduction potential, and turbidity bgs = Below ground surface EDB = Ethylene dibromide MS = Matrix spike MSD = Matrix spike duplicate PAH = Polycyclic aromatic hydrocarbon PCB = Polychlorinated biphenyl QC = Quality control SIM = Selective ion monitoring VOC = Volatile organic compound													

TABLE 9. PROPOSED FIELD PROGRAM FOR VAPOR INTRUSION INVESTIGATION

Sample Type	Proposed Sample Area	Matrix	Sample Method	Sample Frequency	Sample Interval	Sample Identification	No. of Sample Locations	
								TO-15 SIM /TO-15
Vapor Intrusion Samples								
Indoor Air/ Sub-Slab or Crawlspace	Lorraine Process Area (LPA) Church	Air/Soil Gas	TO-15: 6-Liter Summa canister with 24-hour regulator	1 sub-slab or crawlspace 1 indoor per location (sampled once in winter and once in summer)	Sub-slab taken below slab	For sub-slab or crawl space air sample: LPA-SS-01 or LPA-CS-01 For indoor air sample: LPA-IA-01	2	2
	Crawlspace taken in crawlspace				For sub-slab or crawl space air sample: LPA-SS-02 or LPA-CS-02 For indoor air sample: LPA-IA-02	2	2	
	Indoor air sample collected from within breathing zone (3 to 4 feet above ground surface) of the home				For sub-slab or crawl space air sample: WPA-SS-03 or WPA-CS-03 For indoor air sample: WPA-IA-03	2	2	
Background	Upwind of sample locations in open area			Locations around perimeter of sampling area	5 to 8 feet off the ground	LPA-VIBG-01, LPA-VIBG-02, WPA-VIBG-03	4	4
Field duplicate	As close as possible, in space and time, to the original sample			1 outdoor location 1 sub-slab 1 indoor	Same as original sample	Same as original with "D" added to the ID, for example LPA or WPA-SS-01D	3	3
Total Vapor Intrusion Samples							13	13
NOTE: SIM = Selective ion monitoring								

TABLE 4. QUALITY ASSURANCE INDICATOR CRITERIA

Indicator Parameter	Analytical Parameter	QC Sample ^a	Acceptance Criteria for Laboratory Analysis
Accuracy (percent recovery)	VOCs, EDB, SVOCs, PAHs, TPH, PCBs (Aroclors), Pesticides, Dioxins/Furans	MS MSD Blanks ^b	50 to 150 percent recovery (MS/MSD) Less than CRQL (blanks)
	TAL Metals, Mercury, Hexavalent Chromium, Cyanide, AVS-SEM	MS LCS Reference samples Blanks ^a	75 to 125 percent recovery (MS) 80 to 120 percent recovery (LCS) Limits per supplier (reference sample) Less than CRDL (blanks)
Precision (RPD)	VOCs, EDB, SVOCs, PAHs, TPH, PCBs (Aroclors), Pesticides, Dioxins/Furans	MS MSD Field duplicates	30 percent RPD (MS/MSD) 50 percent RPD (field duplicates)
	Background PAHs and Dioxins/Furans via ICS	Field replicates	30 percent RPD (field replicates)
	TAL Metals, Mercury, Hexavalent Chromium, Cyanide, AVS-SEM, Asbestos, General Chemistry Parameters	MS MSD or MD Field duplicates Laboratory duplicates	20 percent RPD (MS, MSD, MD aqueous) 35 percent RPD (MS, MSD, MD solid) 50 percent RPD (field duplicates) 25 percent (laboratory duplicates)
	Background TAL Metals via ICS	Field replicates	30 percent RPD (field replicates)
Sensitivity (quantitation limits)	Analytical tests	MS MD or MSD Field duplicates Laboratory duplicates	Not applicable
Completeness	The objective for data completeness is 90 percent.		
Representativeness	The sampling network and analytical methods for this site are designed to provide data that are representative of site conditions.		
Comparability	The use of standard published sampling and analytical methods, and the use of QC samples, will ensure data of known quality. These data can be compared to other data of known quality.		

NOTES:

^a Not all listed QC samples apply to all analytical parameters. QC samples are analytical method specific.

^b May include method blanks, reagent blanks, instrument blanks, calibration blanks, trip blanks and field blanks.

AVS = Acid-volatile sulfide

CRDL = Contract-required Detection Limit

CRQL = Contract-required Quantitation Limit

EDB = Ethylene bromide

ICS = Incremental Composite Sampling

LCS = Laboratory control sample

MD = Matrix duplicate

MS = Matrix spike

MSD = Matrix spike duplicate

PAH = Polycyclic aromatic hydrocarbon

PCB = Polychlorinated biphenyl

QC = Quality control

RPD = Relative percent difference

SVOC = Semivolatile organic compound

SEM = Simultaneously-extracted metal

TAL = Target Analyte List

TPH = Total petroleum hydrocarbons

VOC = Volatile organic compound

SCREENING CRITERIA FOR AIR AND CLP REFERENCE LIMITS: Primary Compounds for Wilcox 7-27-16

Analyte	Analytical Method (1)	Units	CASRN	Project Screening Level (4)	Achievable	
					DL	RL
Volatile Organic Compounds (VOCs), including Naphthalene						
Acetone	TO-15 SIM/TO-15	µg/m3	67-64-1	32,000	0.109	1.188
Benzene	TO-15 SIM/TO-15	µg/m3	71-43-2	0.36	0.249	0.31947
Bromodichloromethane	TO-15 SIM/TO-15	µg/m3	75-27-4	0.076	0.121	0.670
2-Butanone (Methyl Ethyl Ketone)	TO-15 SIM/TO-15	µg/m3	78-93-3	5,200	0.147	1.180
Carbon Tetrachloride	TO-15 SIM/TO-15	µg/m3	56-23-5	0.47	0.069	0.6292
Chloroform	TO-15 SIM/TO-15	µg/m3	67-66-3	0.12	0.054	0.4883
Chloromethane	TO-15 SIM/TO-15	µg/m3	74-87-3	94	0.114	1.032
3-Chloropropene	TO-15 SIM/TO-15	µg/m3	107-05-1	0.47	0.213	1.565
alpha-Chlorotoluene	TO-15 SIM/TO-15	µg/m3	100-44-7	0.057	0.072	0.518
Cumene	TO-15 SIM/TO-15	µg/m3	98-82-8	420	0.059	0.492
Cyclohexane	TO-15 SIM/TO-15	µg/m3	110-82-7	6,300	0.072	0.344
1,2-Dichlorobenzene	TO-15 SIM/TO-15	µg/m3	95-50-1	210	0.144	0.601
1,3-Dichlorobenzene	TO-15 SIM/TO-15	µg/m3	541-73-1	NS	0.114	0.601
cis-1,2-Dichloroethene	TO-15 SIM/TO-15	µg/m3	156-59-2	NS	0.107	0.39648
1,1-Dichloroethane	TO-15 SIM/TO-15	µg/m3	75-34-3	1.8	0.077	0.40479
1,1-Dichloroethene	TO-15 SIM/TO-15	µg/m3	75-35-4	210	0.091	0.39652
1,2-Dibromoethane (EDB)	TO-15 SIM/TO-15	µg/m3	106-93-4	0.0047	0.115	0.76843
1,4-Dichlorobenzene	TO-15 SIM/TO-15	µg/m3	106-46-7	0.26	0.084	0.60127
trans-1,2-Dichloroethene	TO-15 SIM/TO-15	µg/m3	156-60-5	NS	0.075	0.39648
1,2-Dichloropropane	TO-15 SIM/TO-15	µg/m3	78-87-5	0.28	0.055	0.462
cis-1,3-Dichloropropene	TO-15 SIM/TO-15	µg/m3	10061-01-5	NS	0.077	0.454
1,4-Dioxane	TO-15 SIM/TO-15	µg/m3	123-91-1	0.56	0.133	0.360
Ethyl Benzene	TO-15 SIM/TO-15	µg/m3	100-41-4	1.1	0.096	0.43419
4-Ethyltoluene	TO-15 SIM/TO-15	µg/m3	622-96-8	NS	0.088	0.492
Hexachlorobutadiene	TO-15 SIM/TO-15	µg/m3	87-68-3	0.13	0.469	5.333
Naphthalene	TO-15 SIM/TO-15	µg/m3	91-20-3	0.83	NS	NS
1,1,2,2-Tetrachloroethane	TO-15 SIM/TO-15	µg/m3	79-34-5	0.048	0.124	0.68654
Toluene	TO-15 SIM/TO-15	µg/m3	108-88-3	5,200	0.064	0.37681
Trichloroethene	TO-15 SIM/TO-15	µg/m3	79-01-6	0.48	0.107	0.53738
1,2,4-Trimethylbenzene	TO-15 SIM/TO-15	µg/m3	95-63-6	7.3	0.034	0.492
m,p-Xylene	TO-15 SIM/TO-15	µg/m3	108-38-3	100	0.056	0.43423
o-Xylene	TO-15 SIM/TO-15	µg/m3	95-47-6	100	0.069	0.43423
Vinyl Chloride	TO-15 SIM/TO-15	µg/m3	75-01-4	0.17	0.023	0.255

NOTES:

- Analytical laboratory will screen the sample to determine if sample will be analyzed via TO-15 SIM (low level) or TO-15.
 - U.S. Environmental Protection Agency (EPA) Regional Screening Levels (RSLs) Summary Table May 2016 <http://www.epa.gov/region9/superfund/prg/>.
 - Values calculated based on EPA current residential air RSLs (updated May 2016) modified using the methodology specified in the *EPA OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Source to Indoor Air*, June 2015 by dividing by an attenuation factor of 1 for crawlspace soil gas and 0.03 for sub-slab soil gas.
 - The project screening level was selected to satisfy the EPA requirements as specified in the *EPA OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Source to Indoor Air*.
 - Achievable laboratory limits are for Eurofins Air Toxics, Inc., Folsom, California; limits determined for Quarter 3 of 2015. CASRN = Chemical Abstracts Service Registry Number
- c/n = Carcinogen/non-carcinogen
 NA = Not applicable
 NS = Not specified
- RL = Reporting limit
 µg/m3 = Microgram(s) per cubic meter
 TO-15 = *EPA Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, Second Edition.

Region 6 Sample Control Center, e-mail to warren.christy@epa.gov or to perez.myra@epa.gov

REQUEST FOR LABORATORY SAMPLE ANALYSES

Site Name: Wilcox Oil Company	City/State: Bristow, OK	CERCLIS #: OK0001010917
GPRA Account #:2015 T 06L 06GGCO00	Site Spill ID # 06GG	Type of Investigation/Purpose: RI
EPA SAM, RPM, OSC: Katrina Higgins-Coltrain (RPM) Mail Code: <u>6SF-RL</u>	Analytical Turnaround Time Region 6 Lab: 35 <u>X</u> CLP Organics: 7 <u>14</u> 21 <u>X</u> CLP Inorganics: 7 <u>14</u> 21 <u>X</u>	Type of Contract: EPA RAC Contractor: Patrick Appel Direct: 972-453-5038 Cell: 817-437-0563 Luis Vega Direct: 972-459-5040 Cell: 214-280-9031
Telephone #: 214-665-8143	Are preliminary results required? 48 hrs VOA () Yes (X) No 72 hrs Extractables () Yes (X) No 72 hrs Inorganics () Yes (X) No Requires justification and prior approval.	Shipping Contact: Patrick Appel and Luis Vega
Fax #:		Telephone #: see above
() Yes (X) No		On Site Ph #: see above
Potential Enforcement Action?		E-Mail address: Patrick Appel pappel@eaest.com Luis Vega lvega@eaest.com
Date Sample Control Center Received Request For Sample Analysis:		
Proposed Sampling Period: week of September 12 - 16, 2016		

Please assure that this request for analytical services has been signed and dated by the appropriate Site Assessment Manager, Remedial Project Manager, or On Scene Coordinator. Please assure that the Sample Control Center has a copy of all relevant Quality Assurance Project Plans (QAPPs) and Sampling and Analysis Plans (SAPs).

Is the QAPP, QASP, SAP, O&M Plan, GWMP, DAW, or other relevant plan being submitted with this Request For Sample Analyses? QAPP was previously submitted 6/30/16

If no, please explain (expected date of submission etc.): Submitted 6/30/16

Signature of EPA Site Assessment Manager (SAM), Remedial Project Manager (RPM), or On Scene Coordinator (OSC) to signify approval of this analytical service request.

Signature: _____ Date: _____

To most efficiently obtain laboratory capability for your request, please address the following considerations. Incomplete or erroneous information may result in a delay in the processing of your request.

1. General description of analytical services requested: (QA/R5 - Element B1)

Matrix	Analysis	Number of Samples (without QC) high/low conc	Field QC Samples	
			How many?	Type?
Soil (refer to attached Table 6) Estimate 10 location per day with 4 samples per location over one 5-day week	Volatiles			Trip blank Duplicate Matrix spike Equipment Blank
	Semivolatiles	1	2 1 1	Duplicate Matrix spike Equipment Blank
	PAHs	1	2 1 1	Duplicate Matrix spike Equipment Blank
	Metals including mercury	1	2 1 1	Duplicate Matrix spike Equipment Blank
	Cyanide			Duplicate Matrix spike Equipment Blank
	Dioxins/furans	1	2 1 1	Duplicate Matrix spike Equipment Blank
	Pesticides			Duplicate Matrix spike Equipment Blank
	PCB			Duplicate Matrix spike Equipment Blank
Water (refer to attached Table 8)	Volatiles (including EDB) Trace Water	13	1 2 1	Trip blank Duplicate Matrix Spike
	Volatiles (including EDB) Low Water			Trip blank Duplicate Matrix Spike
	Semivolatiles Low Water	13	2 1	Duplicate Matrix Spike
	PAHs Low Water by SIM	13	2 1	Duplicate Matrix Spike
	Hexavalent Chromium	13	2 1	Duplicate Matrix spike
	Metals including mercury	13	2 1	Duplicate Matrix spike
	Cyanide	13	2 1	Duplicate Matrix spike
Air (refer to attached table 9)	Volatiles	10	3	Duplicate
	Semivolatiles (naphthalene and 1,4-dioxane)	10	3	Duplicate

Additional description (areas where samples are being collected etc.):

2. Analytical protocol required (analytical method & method number, extraction or digestion method & method number, CLP SOW reference, for each matrix if required, etc.): (QA/R5 - Element B4)

Current CLP methods (04/06/16) are: Organics by SOM02.3 Inorganics by ISM02.3

Refer to attached Table 12 and excel sheets.

Matrix	Analysis	Methods
Soil		
	Semivolatiles	SOM02.3 (Low Soil)
	PAHs	SOM02.3 (Low Soil by SIM)
	Metals including mercury	ISM02.3/ICP-MS (with ICP-AES for salts only)
	Dioxins/Furans	CLP HRSM01.2
Water	Volatiles	SOM02.3 Trace Water
	Semivolatiles	SOM02.3 (Low Water)
	PAHs	SOM02.3 (Low Water by SIM)
	Metals, including mercury	ISM02.3/ICP-MS (with ICP-AES for salts only)
	Cyanide	ISM02.3
Air	Hexavalent Chromium	SW-846 Method 7199 or Standard method 218.7
	Volatiles Naphthalene 1,4-Dioxane	EPA TO-15 SIM

Additional Information:

Complete the following information if Method 5035 for VOA soils has been requested:

	# of low conc. soils	# of medium conc. soils		Type of Vials	# of low conc. soils	# of medium conc. soils

3. CLP Modified Analysis Clause - The latest Statement of Works (SOWs), includes a modified analysis clause. The modified analysis allows the regions to request minor changes to current SOW analytical methods in order to meet specific field site requirements. The changes are limited in scope and must be approved by the EPA CLP Program Manager and Contracting Officer before implementation. Information must be submitted **three weeks** prior to the sampling event. The information the client must submit three weeks prior to the sampling event are; Lab Request Form and the approved sampling plan/QAPP.

4. Analytical results required (specify laboratory documentation and reporting requirements, reporting

units, format requirements, etc.): (QA/R5 - Elements A6 and B4)

Standard CLP and/or EPA Region 6 Houston Lab deliverable

5. Data requirements (reporting limits; per analyte per matrix; reporting units; applicable reference levels, etc.): (QA/R5 - Elements A7, B1, and B4) (Attach extra pages if necessary) For CLP capabilities - <http://www.epa.gov/superfund/programs/clp/facts.htm>, For Region 6 Laboratory capabilities - <http://www.epa.gov/earth1r6/6lab/r6lab.htm>

Note: Samples submitted to the CLP for analysis must be low or medium concentration, single phase, homogenous (not oily), soil, sediment, or water. Also, samples with matrix related problems (oily material, high concentration of compounds, etc.) and/or high moisture content will raise the method CRQL's.

- a. Compounds/chemicals of concern (Action levels etc.) – **Required information – List the compounds/analytes driving the investigation and the action level required to meet DQO's.**

Parameters	Action Levels / Detection Limits	
	water (µg/L)	soil/sediment (ug/kg)
Please see attached excel table for ground water and soil.		

The excel tables provide the volatile, semivolatile, PCB, Pesticide, Dioxin, and metals parameters that are of highest interest for the site. The Project screening level is the requested Action Level/Detection limit for this project. Tab 1 is for ground water, Tab 2 is for air, and Tab 3 is for soil.

6. QC Requirements (PE samples & frequency, spikes, duplicates, blanks, & frequency)

QC Type	Frequency	QC Limits
Trip Blank	1 per cooler	See attached Tables 12 and 4.
Duplicate	1 per 10	
Matrix Spike	1 per 20	

Region 6 Sample Control Center, e-mail to warren.christy@epa.gov or to perez.myra@epa.gov

REQUEST FOR LABORATORY SAMPLE ANALYSES

Site Name: Wilcox Oil Company	City/State: Bristow, OK	CERCLIS #: OK0001010917
GPRA Account #:2015 T 06L 06GGCO00	Site Spill ID # 06GG	Type of Investigation/Purpose: RI
EPA SAM, RPM, OSC: Katrina Higgins-Coltrain (RPM) Mail Code: <u>6SF-RL</u>	Analytical Turnaround Time Region 6 Lab: 35 <u>X</u> CLP Organics: 7 <u>14</u> 21 <u>X</u> CLP Inorganics: 7 <u>14</u> 21 <u>X</u>	Type of Contract: EPA RAC Contractor: Patrick Appel Direct: 972-453-5038 Cell: 817-437-0563 Luis Vega Direct: 972-459-5040 Cell: 214-280-9031
Telephone #: 214-665-8143	Are preliminary results required? 48 hrs VOA () Yes (X) No 72 hrs Extractables () Yes (X) No 72 hrs Inorganics () Yes (X) No Requires justification and prior approval.	Shipping Contact: Patrick Appel and Luis Vega
Fax #:		Telephone #: see above
() Yes (X) No		On Site Ph #: see above
Potential Enforcement Action?		E-Mail address: Patrick Appel pappel@eaest.com Luis Vega lvega@eaest.com
() Yes (X) No		Date Sample Control Center Received Request For Sample Analysis:
Proposed Sampling Period: week of September 19 - 23, 2016		

Please assure that this request for analytical services has been signed and dated by the appropriate Site Assessment Manager, Remedial Project Manager, or On Scene Coordinator. Please assure that the Sample Control Center has a copy of all relevant Quality Assurance Project Plans (QAPPs) and Sampling and Analysis Plans (SAPs).

Is the QAPP, QASP, SAP, O&M Plan, GWMP, DAW, or other relevant plan being submitted with this Request For Sample Analyses? QAPP was previously submitted **6/30/16**

If no, please explain (expected date of submission etc.): **Submitted 6/30/16**

Signature of EPA Site Assessment Manager (SAM), Remedial Project Manager (RPM), or On Scene Coordinator (OSC) to signify approval of this analytical service request.

Signature: _____ Date: _____

To most efficiently obtain laboratory capability for your request, please address the following considerations. Incomplete or erroneous information may result in a delay in the processing of your request.

1. General description of analytical services requested: (QA/R5 - Element B1)

Matrix	Analysis	Number of Samples (without QC) high/low conc	Field QC Samples	
			How many?	Type?
Soil (refer to attached Table 6) Estimate 10 location per day with 4 samples per location over one 5-day week	Volatiles	205	5 20 10 10	Trip blank Duplicate Matrix spike Equipment Blank
	Semivolatiles	205	20 10 10	Duplicate Matrix spike Equipment Blank
	PAHs	205	20 10 10	Duplicate Matrix spike Equipment Blank
	Metals including mercury	205	20 10 10	Duplicate Matrix spike Equipment Blank
	Cyanide	205	20 10 10	Duplicate Matrix spike Equipment Blank
	Dioxins/furans	10	1 1 1	Duplicate Matrix spike Equipment Blank
	Pesticides	10	1 1 1	Duplicate Matrix spike Equipment Blank
	PCB	10	1 1 1	Duplicate Matrix spike Equipment Blank
Water (refer to attached Table 8)	Volatiles (including EDB) Trace Water	1	1 1 1	Trip blank Duplicate Matrix Spike
	Volatiles (including EDB) Low Water	1	1 1 1	Trip blank Duplicate Matrix Spike
	Semivolatiles Low Water	1	1 1	Duplicate Matrix Spike
	PAHs Low Water by SIM	1	1 1	Duplicate Matrix Spike
	Hexavalent Chromium	1	1 1	Duplicate Matrix spike
	Metals including mercury	1	1 1	Duplicate Matrix spike
	Cyanide	1	2 1	Duplicate Matrix spike
				Duplicate
				Duplicate

Additional description (areas where samples are being collected etc.):

2. Analytical protocol required (analytical method & method number, extraction or digestion method & method number, CLP SOW reference, for each matrix if required, etc.): (QA/R5 - Element B4)

Current CLP methods (04/06/16) are: Organics by SOM02.3 Inorganics by ISM02.3

Refer to attached Table 12 and excel sheets.

Matrix	Analysis	Methods
Soil	Volatiles	5035 + SOM02.3 (Low Soil)
	Semivolatiles	SOM02.3 (Low Soil)
	PAHs	SOM02.3 (Low Soil by SIM)
	Metals including mercury	ISM02.3/ICP-MS (with ICP-AES for salts only)
	Cyanide	ISM02.3
	Dioxins/Furans	CLP HRSM01.2
	Pesticides	SOM02.3
	PCB	SOM02.3
Water	Volatiles	SOM02.3 Trace Water
	Volatiles	SOM02.3 (Low Water)
	Semivolatiles	SOM02.3 (Low Water)
	PAHs	SOM02.3 (Low Water by SIM)
	Metals, including mercury	ISM02.3/ICP-MS (with ICP-AES for salts only)
	Cyanide	ISM02.3
	Hexavalent Chromium	SW-846 Method 7199 or Standard method 218.7

Additional Information:

Complete the following information if Method 5035 for VOA soils has been requested:

	# of low conc. soils	# of medium conc. soils		Type of Vials	# of low conc. soils	# of medium conc. soils
Pre-Weighed Vials with stir bar (Closed System Vials)	100	100				

3. CLP Modified Analysis Clause - The latest Statement of Works (SOWs), includes a modified analysis clause. The modified analysis allows the regions to request minor changes to current SOW analytical methods in order to meet specific field site requirements. The changes are limited in scope and must be approved by the EPA CLP Program Manager and Contracting Officer before implementation. Information must be submitted **three weeks** prior to the sampling event. The information the client must submit three weeks prior to the sampling event are; Lab Request Form and the approved sampling plan/QAPP.

4. Analytical results required (specify laboratory documentation and reporting requirements, reporting units, format requirements, etc.): (QA/R5 - Elements A6 and B4)

Standard CLP and/or EPA Region 6 Houston Lab deliverable

5. Data requirements (reporting limits; per analyte per matrix; reporting units; applicable reference levels, etc.): (QA/R5 - Elements A7, B1, and B4) (Attach extra pages if necessary) For CLP capabilities - <http://www.epa.gov/superfund/programs/clp/facts.htm> For Region 6 Laboratory capabilities - <http://www.epa.gov/earth1r6/6lab/r6lab.htm>

Note: Samples submitted to the CLP for analysis must be low or medium concentration, single phase, homogenous (not oily), soil, sediment, or water. Also, samples with matrix related problems (oily material, high concentration of compounds, etc.) and/or high moisture content will raise the method CRQL's.

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QC Type	Frequency	QC Limits
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Duplicate	1 per 10	
Matrix Spike	1 per 20	